

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF WISCONSIN

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U.S. WATER SERVICES, INC.  
and ROY JOHNSON,

Plaintiffs,

v.

NOVOZYMES A/S and  
NOVOZYMES NORTH AMERICA, INC.,

Defendants.

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POST-TRIAL JURY  
INSTRUCTIONS

13-cv-864-jdp

Ladies and Gentlemen of the Jury:

Now that you have heard the evidence, I will give you the instructions that will govern your deliberations in the jury room. It is my job to decide what rules of law apply to the case and to explain those rules to you.

You have two duties as a jury. Your first duty is to decide the facts from the evidence in the case. This is your job, and yours alone.

Your second duty is to apply the law that I give you to the facts. You must follow these instructions, even if you disagree with them. Each of the instructions is important, and you must follow all of them.

Perform these duties fairly and impartially. Do not allow sympathy, prejudice, fear, or public opinion to influence you.

The verdict must represent the considered judgment of each juror. Your verdict, whether for or against any party, must be unanimous. You should make every reasonable effort to reach a verdict. In doing so, you should consult with one another, express your own views, and listen to the opinions of your fellow jurors. Discuss your differences with an open

mind. Do not hesitate to reexamine your own views and change your opinion if you come to believe it is wrong. But you should not surrender your honest beliefs about the weight or effect of evidence solely because of the opinions of other jurors or for the purpose of returning a unanimous verdict. All of you should give fair and equal consideration to all the evidence and deliberate with the goal of reaching an agreement that is consistent with the individual judgment of each juror. You are impartial judges of the facts.

Your deliberations will be secret. You will never have to explain your verdict to anyone.

If you have formed any idea that I have an opinion about how the case should be decided, disregard that idea. It is your job, not mine, to decide the facts of this case.

In answering the questions on the verdict form, you should consider only the evidence that has been received at this trial. Do not concern yourselves with whether your answers will be favorable to one side or another, or with what the final result of this lawsuit may be.

**The questions you must decide**

The questions you must decide relate to two topics: infringement and invalidity. You must answer a number of questions related to each topic.

You will have to answer the following questions about infringement: (1) whether any of Novozymes's customers directly infringed any of the asserted claims; (2) whether Novozymes induced one or more of its customers to infringe any of the asserted claims; (3) whether Novozymes contributed to infringement by one or more of its customers of any of the asserted claims.

You will have to answer the following questions about invalidity: (4) whether any of the asserted claims are invalid because they are anticipated by prior art; (5) whether any of

the asserted claims are invalid because they are obvious in light of the prior art; and (6) whether any of the asserted claims are invalid because they are not adequately supported by the written description of the invention. I will explain each of these questions in more detail.

### **Burden of proof**

As I told you at the beginning of this trial, U.S. Water has the burden of proving that Novozymes infringed the patents-in-suit by a preponderance of the evidence. “Preponderance of the evidence” means that when you have considered all the evidence in the case, you must be persuaded that it is more probably true than not true. Novozymes has the burden of proving that the patents-in-suit are invalid by clear and convincing evidence. When I say that Novozymes must prove invalidity by “clear and convincing evidence,” it means that when you have considered all of the evidence in the case, you are convinced that it is highly probable that it is true. This is a higher burden of proof than “more probably true than not true.”

If, after you have discussed the testimony and all other evidence, you find that the evidence is so uncertain or inadequate that you have to guess what the answer should be, then the party with the burden of proof has not met the required burden of proof. Your answer is not to be based on guesswork or speculation. Your answer must be based upon credible evidence from which you can find the existence of the facts that the party must prove to satisfy the burden of proof.

### **Exhibits**

Counsel and experts have used demonstrative exhibits to illustrate testimony and arguments. You may find that these demonstrative exhibits are helpful, but they are not themselves evidence. I have admitted into evidence some exhibits that are summaries of data.

These admitted summaries are evidence, and you should consider the summaries just like any other evidence in the case. You will have all the admitted exhibits with you during deliberations.

## THE PATENT SYSTEM

At the beginning of the trial, I gave you some general information about patents and the patent system and a brief overview of the patent laws relevant to this case. I will now give you more detailed instructions about those aspects of patent law that specifically relate to this case.

I begin with a bit about the history of the patents at issue. As you know, U.S. Water asserts two patents in this case: the '137 patent and the '399 patent. The prosecution history of these patents began when the inventors applied for a patent on October 17, 2007. That application, U.S. Patent Application 11/873,630, became U.S. Patent No. 8,039,244, which we have called the '244 patent. The '137 patent and the '399 patent are "continuations" of the '244 patent, which means that the '137 patent and the '399 patent have the same specification as the '244 patent. But the '137 patent and the '399 patent have different claims than the '244 patent. The '244 patent is not asserted in this case.

A patent cannot be infringed until it has been examined by the U.S. Patent Office and the Patent Office issues the patent. The '137 patent was issued on April 9, 2013. The '399 patent was issued on December 17, 2013.

## PERSON OF ORDINARY SKILL

Some issues in this case are determined by reference to a “person of ordinary skill in the field of the invention,” a term that I will use later in these instructions. The person of ordinary skill in the field of the invention is a hypothetical person who is presumed to know the “prior art,” which are developments in the field that came before the invention, and to possess ordinary creativity. In this case, the field of the invention is enzyme chemistry in fuel ethanol production.

So in this case, a person of ordinary skill in the field of the invention is someone who has at least a bachelor’s degree in a relevant discipline such as chemical engineering, chemistry or biochemistry, at least two years of experience working in a grain-based fuel ethanol processing facility, and an understanding of (i) the operation of a fuel ethanol processing plant, including methods employed for inline cleaning processes as well as for reduction of deposit build-up on internal surfaces in plant equipment, (ii) processes and chemistry of ethanol production, including the use of enzyme solutions, and (iii) functions, uses, and characteristics of enzymes. Such knowledge and understanding can be the product of a variety of experiences such as research, training, and experience in designing and/or operating an ethanol plant and/or consulting with respect to such a plant.

## THE PATENT CLAIMS

The claims of a patent are the numbered sentences at the end of the patent. The claims describe what the patent owner may prevent others from doing.

Claims are usually divided into parts called “elements,” “limitations,” or “requirements.” For example, a claim that covers the invention of a table may describe the

tabletop, four legs, and glue that holds the legs and the tabletop together. The tabletop, legs, and glue are each a separate limitation or requirement of the claim.

### INTERPRETATION OF THE PATENT CLAIMS

I have previously defined terms used in the claims. You must use these definitions in making your decisions. Many of them are included in the juror notebooks that you received at the beginning of trial.

First, when a patent claim uses the term “comprising,” it means that the claimed invention includes the listed elements, but that it is not limited to covering devices with only those elements.

Second, some of the asserted claims state that “the pH of the ethanol processing fluid in the beer column is 4.5 or higher during production of the quantity of ethanol.” That means that the pH of the ethanol processing fluid in the beer column must be 4.5 or higher at some point during production of ethanol.

Third, some of the asserted claims state that the reduction in the formation of deposits “is accomplished substantially without the addition of an acidic compound.” That means that deposit reduction is accomplished substantially by phytase and not by the addition of an acid compound with an oxidizer or with ultraviolet light. But the phrase does not preclude all use of acidic compounds in ethanol processing.

Fourth, all of the asserted claims include the step of “reducing the formation of deposits of insoluble phytic acid or phytic acid salts.” The “reducing” element is satisfied if the amount of phytic acid and phytic acid salt is reduced more than it would have been without the use of phytase.

Fifth, all of the asserted claims refer to the reduction of “deposits” on the surfaces of fuel ethanol equipment. Those “deposits” must include some phytic acid or its salts, but the deposits do not need to be composed primarily of phytic acid or its salts.

Sixth, all of the asserted claims include the step of “adding phytase to an ethanol processing fluid in the equipment containing phytic acid salts or salts of phytic acid.” Phytase may be added before, during, or after fermentation. Phytase does not have to be added to the beer column.

Seventh, all of the asserted claims refer to a “beer column,” which is a component of a distillation unit in which alcohol is vaporized and removed from the beer.” The beer column does not include a beer pre-heater, a beer reboiler, or a beer mash heat exchanger and it does not have to be cylindrical in shape.

All other terms in the patents should be given their plain and ordinary meaning as they would be understood by one of ordinary skill in the field of the invention.

#### INDEPENDENT AND DEPENDENT CLAIMS

There are two types of patent claims, independent and dependent. An independent claim stands on its own and does not refer to any other claim of the patent. A dependent claim refers to at least one other claim in the patent. Another way of saying this is that a dependent claim “depends from” another claim. A dependent claim includes each of the requirements of the other claims to which it refers, as well as the requirements in the dependent claim itself.

Earlier I described a hypothetical patent claim for a table that described the tabletop, four legs, and glue to hold the legs and tabletop together. That is an example of an

independent claim. In that same hypothetical patent, a dependent claim might be one that stated, “the same table in the initial claim, where the tabletop is square.” The dependent claim includes all the requirements of the independent claim, but then adds one or more requirements of its own.

To take one example from this case, claim 1 of the '137 patent is an independent claim. Claim 6 and claim 12 depend from claim 1. The verdict form shows which claims are independent claims, and which claims depend from those claims.

## INFRINGEMENT

U.S. Water contends that Novozymes's customers directly infringe claims 1, 6, and 12 of the '137 patent and claims 1, 2, 5, 7, 8, 9, 16, 18, 19, and 20 of the '399 patent. U.S. Water also contends that Novozymes itself indirectly infringed in two ways. First, U.S. Water contends that Novozymes induced its customers to infringe. Second U.S. Water contends that Novozymes contributed to its customers' infringement. I will explain these different types of infringement.

## DIRECT INFRINGEMENT BY CUSTOMERS

Novozymes's customers are not parties to this case. But to prevail on its infringement case against Novozymes, U.S. Water must first prove that one or more of Novozymes's customers directly infringed each asserted claim.

To show direct infringement, U.S. Water must prove by a preponderance of the evidence that a Novozymes customer performed every step of the asserted claim after the

patent was issued. I remind you that the '137 patent issued on April 9, 2013, and that the '399 patent issued on December 17, 2013.

You must determine direct infringement separately for each asserted claim. If you find that an independent claim is not infringed, then you will necessarily find that there is no infringement of any dependent claim that depends from that independent claim. This is because dependent claims include all the requirements of the independent claim with at least one additional requirement. But if you find that an independent claim has been infringed, you must still decide separately whether any dependent claims have been infringed.

U.S. Water's own product is irrelevant. You must compare each asserted claim to the actions performed by Novozymes's customers while using Phytaflow.

This is a good time to look at the infringement section of the verdict form. You will see that there are many specific questions for you to answer. In their closing arguments, counsel will help you understand how the questions form manageable groups.

On the special verdict form, record "yes" or "no" in the first column for each claim for each potential direct infringer.

If there is no direct infringement, there can be no indirect infringement. So if you find that a customer did not directly infringe a claim, you must also find that Novozymes did not induce that customer's infringement of that claim and did not contribute to that customer's infringement. In other words, if you put "no" in the first column, you must also put "no" in the second and third columns.

If you find that a customer did directly infringe a claim (if your answer in the "direct infringement" column is "yes" as to a particular claim), you must decide next whether Novozymes induced that customer's infringement of the claim and whether Novozymes

contributed to the customer's infringement of the claim (you must answer "yes" or "no" in both the "inducement" and "contributory infringement" columns as to that claim).

The first sets of questions deal with the eight specific Novozymes customers that you have heard about. You will see that one set of questions deal with other Novozymes customers that use Phytaflow. U.S. Water contends that these other customers directly infringe claims 1, 5, 7, 8, and 9 of the '399 patent, and that Novozymes itself indirectly infringes these claims. You will have to decide whether U.S. Water has proven by a preponderance of the evidence that these other plants directly infringe these claims, and whether Novozymes indirectly infringes them.

### INDUCEMENT

U.S. Water contends that Novozymes induced its customers to infringe each of the asserted claims of the patents-in-suit. To prove inducement, U.S. Water must prove each of the following by a preponderance of the evidence:

1. After the patent was issued, Novozymes aided, instructed, or otherwise acted with the intent to cause that customer or those customers to directly infringe the asserted claim.
2. Novozymes was aware of the patent that includes the asserted claim.
3. Novozymes knew that the customer or customers would directly infringe the asserted claim.

You must determine whether Novozymes induced infringement separately as to each asserted claim. Remember, there can be no inducement if there is no direct infringement. So you should answer "no" to the inducement question for any claim that you find was not directly infringed by that customer.

## CONTRIBUTORY INFRINGEMENT

U.S. Water contends that Novozymes contributed to direct infringement of each of the asserted claims. To prove contributory infringement, U.S. Water must prove each of the following by a preponderance of the evidence:

1. Novozymes was aware of the patent that includes the asserted claim.
2. Novozymes sold a material for use in performing the steps of the asserted claim.
3. The material was a significant part of the method in the asserted claim.
4. The material was not a commonly available item or a product with a substantial non-infringing use. A use is substantial if it is not unusual, impractical, or experimental.
5. Novozymes's sale of the material occurred after the patent that includes the asserted claim was issued.
6. Novozymes knew that the material was especially made or adapted for a use that would infringe the asserted claim.

You must determine whether Novozymes contributed to infringement separately as to each asserted claim. Remember, there can be no contributory infringement if there is no direct infringement. So you should answer “no” to the contributory infringement question for any claim that you find was not directly infringed by that customer.

## VALIDITY

Novozymes challenges the validity of the asserted claims on three grounds. First, Novozymes contends that each asserted claim is “anticipated” by prior art. Second, Novozymes contends that each asserted claim would have been “obvious” to a person of ordinary skill in the field of the invention. Third, Novozymes contends that the patents-in-suit do not adequately describe the inventions in the asserted claims.

Each of the claims of the patents is presumed to be valid. For that reason, Novozymes has the burden of proving invalidity by clear and convincing evidence.

You must evaluate and determine separately the validity of each claim of each patent.

#### DEFINITION OF “PRIOR ART”

In addressing some of Novozymes’s invalidity defenses, you will have to consider what is disclosed in the “prior art.” “Prior art” is subject matter in the field of the invention that was known prior to the date of the invention, which in this case is October 17, 2007. Prior art includes issued patents, published patent applications, and some other publications, including articles, books, and public presentations.

You have heard evidence about several pieces of prior art that show the general background of what a person of ordinary skill would know as of the date of the invention. Novozymes contends that two pieces of prior art show that the asserted claims are invalid: (1) World Intellectual Property Organization application, No. WO 01/62947 for “Fermentation with a Phytase,” credited to Chris Veit and others, published on August 30, 2001; and (2) U.S. Patent No. 4,914,029 for “Process for Steeping Cereals with a New Enzyme Preparation,” credited to Abraham Caransa and others, issued on April 3, 1990. I will refer to the first piece of prior art as “Veit” and the second piece as “Caransa.”

#### ANTICIPATION

Novozymes contends that each asserted claim is invalid because it was “anticipated” by Veit.

To prove that a patent claim is anticipated, Novozymes must prove by clear and convincing evidence that each and every element in the claim is present in a single item of prior art, and arranged or combined in the same way as recited in the claim. You may not combine two or more items of prior art to find anticipation. In determining whether every one of the elements of the claimed invention is found in the prior art, you should take into account what a person of ordinary skill in the field of the invention would have understood from his or her review of the particular item of prior art.

The court has already determined that Veit teaches all of the elements of the asserted claims except one: reducing the formation of insoluble deposits of phytic acid or salts of phytic acid. In determining whether the asserted claims are anticipated, you must assume that Veit teaches all of the other elements of each asserted claim.

In determining whether Veit anticipates an asserted claim, you must consider not only what is expressly disclosed in Veit, but also what is inherently present or disclosed in Veit or inherently results from its practice.

Prior art inherently anticipates a patent claim if the missing element or feature would necessarily result from what the prior art teaches to persons of ordinary skill in the field of the invention. A party claiming inherent anticipation must prove by clear and convincing evidence that the allegedly inherent element necessarily is present. Evidence other than the item of prior art may be used to show that elements that are not expressly disclosed in the reference are inherent in it. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. Rather, the inherent result must inevitably result from the disclosed steps. It is not required, however, that persons of ordinary skill actually recognized or appreciated the inherent disclosure at the time the prior art was first known or used.

If you find that an independent claim is anticipated, you must still determine separately whether dependent claims that depend from the independent claim are anticipated.

### OBVIOUSNESS

Novozymes contends that all of the asserted claims are invalid because they are obvious in light of Veit and Caransa.

To prove that a patent claim is obvious, Novozymes must prove by clear and convincing evidence that a person of ordinary skill in the field of the invention, who knew about all the prior art existing at the time the invention was made, would have come up with the invention at that time. Obviousness may be shown by considering two or more items of prior art in combination.

In deciding obviousness, you should put yourself in the position of a person with ordinary skill in the field at the time of the claimed invention. You must not use hindsight; in other words, you may not consider what is known now or what was learned from the patents-in-suit. In addition, you may not use the patents-in-suit as a roadmap for selecting and combining items of prior art.

In making your decision regarding obviousness, you should consider the following:

- The scope and content of the prior art. You may consider prior art that was reasonably relevant to the problem the inventor faced, including prior art in the field of the invention and prior art from other fields that a person of ordinary skill would consider when attempting to solve the problem;
- Any differences between the prior art and the invention in the asserted claim;
- The level of ordinary skill in the field of the invention at the time of the invention; and

- Any of the indications of non-obviousness described in the next instruction that are shown by the evidence.

If you find that an independent claim is obvious, you must still determine separately whether dependent claims that depend from the independent claim are obvious.

### COMBINING OF PRIOR ART REFERENCES

Even if every element of the claimed invention is found in Veit and Caransa, it does not necessarily prove obviousness because many inventions rely on building blocks of prior art. But a claimed invention may be obvious even if the prior art does not teach each claim limitation, so long as the evidence shows that a person of ordinary skill in the field of the invention would modify the prior art to obtain the claimed invention. In deciding this, you may consider, among other things, any of the following factors:

- Whether the claimed invention was merely the predictable result of using Veit and Caransa according to their known functions;
- Whether the claimed invention provides an obvious solution to a known problem in the relevant field;
- Whether Veit and Caransa teach or suggest the desirability of combining elements claimed in the invention;
- Whether Veit and Caransa teach away from combining elements in the claimed invention; and
- Whether it would have been obvious to try the combinations of elements, such as when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions.

### SECONDARY CONSIDERATIONS OF NON-OBVIOUSNESS

In deciding obviousness, you should consider any of the following factors that, if they have been shown by the evidence, may indicate that the invention was not obvious.

- The invention achieved commercial success resulting from the claimed invention, rather than from something else, such as innovative marketing.
- The invention satisfied a long-felt need.
- Others copied the invention.
- The invention achieved unexpected results.
- Others in the field praised the invention.
- Others failed in attempting to make the invention.
- Others in the field of the invention expressed skepticism or surprise at the making of the invention.

It is up to you to decide if these factors have been shown by the evidence. No single factor is more or less important than the others. However, a factor is evidence that the patent is not obvious only if that factor is the result of a patented feature of the invention.

#### WRITTEN DESCRIPTION REQUIREMENT

Novozymes contends that the asserted claims are invalid because the specification for the patents-in-suit does not contain an adequate written description of the claimed invention. In particular, Novozymes contends that the following two claim requirements lack written description:

- “the pH of the ethanol processing fluid in the beer column is 4.5 or higher during the production of [the quantity of] ethanol”; this requirement is in claims 1, 6, and 12 of the ’137 patent and claims 2, 16, and 18–20 of the ’399 patent; and
- “the reduction is accomplished substantially without the addition of an acidic compound that can break down organic phosphates and phosphonates into soluble inorganic phosphonates in the presence of an oxidizer, oxidizing agent, or ultraviolet light”; this requirement is in claims 1, 5, and 7–9 of the ’399 patent.

To succeed on these contentions, Novozymes must prove by clear and convincing evidence that the specification section of the patent does not contain an adequate written description of one or more of the requirements of the particular patent claim that is at issue.

The purpose of the written description requirement is to demonstrate that the inventor was in possession of the invention at the time the original application for the patent was filed, in this case October 17, 2007. The written description requirement is satisfied if persons of ordinary skill in the field of the invention would recognize from reading the patent specification that the inventor possessed the subject matter finally claimed in the patent, even though the description may not use the exact words found in the claim. The written description requirement is satisfied if the specification shows that the inventor possessed his or her invention as of the date the original patent application was filed, even though the claims themselves may have been changed or new claims added since that time.

It is unnecessary to spell out every detail of the invention in the specification, and specific examples are not required. A requirement in a claim need not be specifically disclosed in the patent application as originally filed if a person of ordinary skill would understand that the missing requirement is necessarily implied in the patent application as originally filed. However, if the claimed invention does not appear in the original application, the claim is invalid regardless whether a person of skill in the art could make or use the claimed invention.

In evaluating whether the specification has provided an adequate written description, you may take into account such factors as:

1. the nature and scope of the patent claims;
2. the complexity, predictability, and maturity of the technology at issue;

3. the existing knowledge in the relevant field; and
4. the scope and content of the prior art.

If you find that an independent claim lacks an adequate written description, then you will necessarily find that any dependent claim that depends from the independent claim lacks an adequate written description. But if you find that a dependent claim lacks an adequate written description, then you must decide separately whether there is an adequate written description for the independent claim from which the dependent claim depends.

## INSTRUCTIONS AFTER CLOSING ARGUMENTS

### **Selection of Presiding Juror; Communication with the Judge; Verdict**

When you go to the jury room to begin considering the evidence in this case, you should first select one of the members of the jury to act as your presiding juror. This person will help to guide your discussions in the jury room.

You are free to deliberate in any way you decide, or select whomever you like as the presiding juror. When thinking about who should be presiding juror, you may want to consider the role that a presiding juror usually plays. He or she serves as the chairperson during the deliberations and has the responsibility of ensuring that all jurors who desire to speak have a chance to do so before any vote. The presiding juror should guide the discussion and encourage all jurors to participate. I encourage you at all times to keep an open mind if you ever disagree or come to conclusions that are different from those of your fellow jurors. Listening carefully and thinking about the other juror's point of view may help you understand that juror's position better or give you a better way to explain why you think your position is correct. I also suggest that any votes on a verdict be delayed until everyone can have a chance to say what they think without worrying what others on the panel might think of their opinion.

Once you are in the jury room, if you need to communicate with me, the presiding juror will send a written message to me. However, do not tell me how you stand as to your verdict.

As I have mentioned before, the decision you reach must be unanimous; you must all agree.